

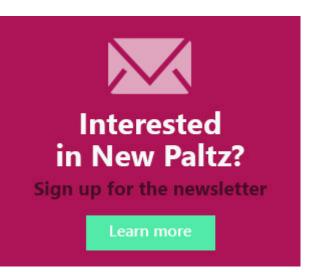
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Last summer's spectacular algae blooms in the Wallkill River and a recently released report on water quality monitoring from the environmental watchdog organization Riverkeeper were the hot topics on the Wallkill River Watershed Alliance (WRWA)'s agenda at its annual Wallkill River Summit, held on Tuesday, March 28. Nearly 100 scientists, agency representatives, elected officials, students and interested members of the general public gathered in the Student Union Building at SUNY New Paltz to share the latest information about the status of the watershed and what efforts are being pursued to improve water quality.

Both a scientist and an elected official, New Paltz Town Supervisor



Neil Bettez, who currently serves as the chair of WRWA's Science Working Group, gave a presentation on how excess nutrients in the Wallkill support algal blooms. Of the Wallkill's 12 sub-watersheds, only two meet the Environmental Protection Agency (SPA)'s recommended Water Quality Criteria for the "limiting nutrients" nitrogen and phosphorus, based on testing done in 2011 and 2012, Bettez noted: at the river's headwaters in Sparta, New Jersey and near its end, in Tillson. Agricultural areas tend to have the worst concentrations, on account of fertilizer runoff, and nitrogen discharges tend to spike in midsummer, he said.

Bettez then went on to present a report on harmful algae on behalf of Dr. Jillian Decker of SUNY Rockland, who was unable to attend. He explained the differences among the different types of microalgae and cyanobacteria prevalent in the river. The "common culprit" in the types of choking algal blooms that New Paltz saw in the summer of 2016 is a cyanobacterium called Microcystis, which tends to thrive in midsummer conditions when water levels are low and nitrogen and phosphorus concentrations high. "A rainstorm often washes everything out," Bettez noted.

Of potentially greater concern than these temporary algal blooms as a public health threat are the persistent high levels of sewage contamination throughout the Wallkill, as measured by water samples



gathered regularly by "citizen scientist" volunteers at 24 sites since 2012. Jennifer Epstein of Riverkeeper's Water Quality Program offered an overview of the organization's report on the results of that sampling, just released a few days earlier. The presence of sewage contamination is gauged by levels of the fecal bacterium Enterococcus, which is used as an indicator because it "does not survive long in the environment" outside human or animal digestive tracts and thus is representative of very local conditions. In itself, entero is "not usually harmful, but indicates harmful pathogens may be present," Epstein explained.

Three different sets of measurement criteria for entero are established by the EPA. According to the short-term Beach Action Value indicators that can close a public beach to swimming based on a single-day sample, 87 percent of Wallkill River samples failed overall, and 97 percent following rainy weather. Heavy summer rains may wash out an algal bloom, but they also trigger combined sewer overflows that often exceed the capacity of local sewage treatment infrastructure to filter them.

A longer-term criterion is the Geometric Mean (GM), a weighted average for a particular sampling site over time. Of all the Hudson River tributaries studied by Riverkeeper, the Wallkill is the secondworst, with an average entero count of 380.7 Enterococcus cells per

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100 milliliters of water; the EPA's safe-swimming threshold is a mere 30 cells per 100 milliliters. "All the sites exceed the thresholds, many by ten times or more," Epstein said. In its sixth year of entero monitoring, Riverkeeper is currently seeking funding from a variety of sources to do enhanced monitoring specifically for the Wallkill on account of its miserable report card thus far, she noted.

The summit continued with reports on half a dozen projects that WRWA has been conducting in various parts of the Wallkill Valley, including the creation of a watershed plan for the Mohegan Brook in Orange County; flood mitigation measures in the Black Dirt Region, near Warwick; efforts by the Department of Environmental Conservation's Hudson River Estuary Program to identify and mitigate blocked culverts; ongoing monitoring of fish species in various parts of the Wallkill; strategizing ways to use watersheds to mitigate adverse effects of climate change, using applied research provided by SUNY-New Paltz's Benjamin Center; and anticipating potential impacts of the Pilgrim Pipelines, which are proposed to cross under the Wallkill at the site of Perrine's Bridge in Tillson.

Finally, representatives of WRWA working groups and partner organizations offered suggestions for "What You Can Do" to get involved in the campaign to restore the Wallkill River to health. Persons interested in volunteering at any level can find out more by visiting

## www.wallkillalliance.org.

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